New claims

1. Floating lowering an lifting device (1) comprising a floating structure (2) and a lifting unit (3) lowerable from the floating structure (2) towards the sea bed, the lifting unit (3) having a chamber (5) with at least one gas-inlet opening (9) in its wall and a gas supply means (13,32) connected to the gas-inlet opening (9), the device (1) comprising a control means (14,15) for controlling a gas supply rate to the chamber (5), the chamber comprising a releasable coupling member (7) for attaching to a load, characterised in that, the lifting unit (3) is attached to the floating structure (2) in a non-rigid manner, the chamber (5) comprising at least one equalisation opening (23,25) being in fluid communication with the environment outside of the chamber, the control means (14,15) being adapted to supply gas to the chamber for compensating gas volume loss at increasing depth of the lifting unit (3) below sea level and to release air from the chamber after depositing a load onto the sea bed.

2. Floating lowering and lifting device (1) according to claim 1, the gas inlet opening (9) during use being situated higher up along a longitudinal height of the lifting unit (3) than the equalisation opening (23, 25).

3. Floating lowering and lifting device (1) according to claim 1 or 2, wherein the gas supply means (13) are placed on the floating structure (2), a fluid supply duct (11) connecting the gas supply means (13) to the chamber (5) .

4. Floating lowering and lifting device (1) according to claim 3, wherein the gas supply means (13) comprises a container with a compressed gas, the control means (15) comprising a valve connected to the fluid supply duct (11) , or a compressor (16), the control means comprising a power control (14) operatively associated with the compressor (16).

5. Floating lowering and lifting device (11) according to claim 1 or 2, wherein the gas supply means comprise a container (32) connected to the chamber (5) via a controllable valve (31), the container comprising a compressed gas and being lowerable

with the chamber, the control means (33) being connected to the valve (31) for controlling the gas supply to the chamber (5).

6. Floating lowering and lifting device (1) according to any of the preceding claims, wherein the chamber (5) is suspended from the floating structure (2) via a guide cable (29).

7. Floating lowering and lifting device (1) according to any of the preceding claims, the chamber (5) comprising at least one thruster (17) powered via a control line.

8. Floating lowering and lifting device (1) according to any of the preceding claims, wherein the chamber (5) comprises a closed compartment (34).

9. Floating lowering and lifting device (1) according to any of the preceding claims, wherein the guide cable (29) or control line is connected to a sheave at one end of an arm (43), which is suspended from the floating structure (2), a counterweight (44) attached to an other end of said arm (43).

10. Floating lowering and lifting device (11) according to any of the preceding claims, having a gas release mechanism (21) connected to a control means which is adapted to open the gas release mechanism after placing the load on the sea bed, prior to detaching the releasable coupling member (7).

11. Method of raising and lowering an object (8) from the seabed comprising the steps of:

- attaching a load (8) to the lifting unit (3) according to any of the preceding claims;
- adding or releasing a gas into or from the chamber (5) in dependence of the water depth while maintaining an open connection of the chamber with the sea via the equalisation opening (23, 25).

12. Method according to claim 11, wherein upon depositing the load (8) onto the seabed gas is released from the chamber (5) to maintain a substantially predetermined buoyancy when the weight of the load is transferred from the lifting unit to the seabed.

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